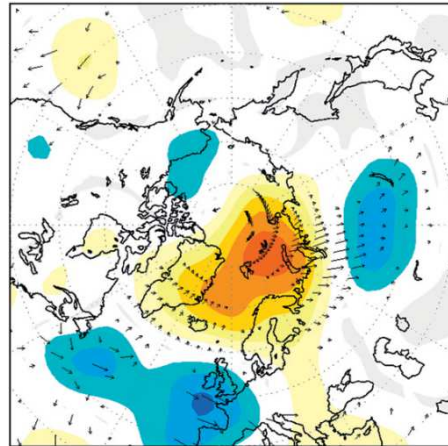


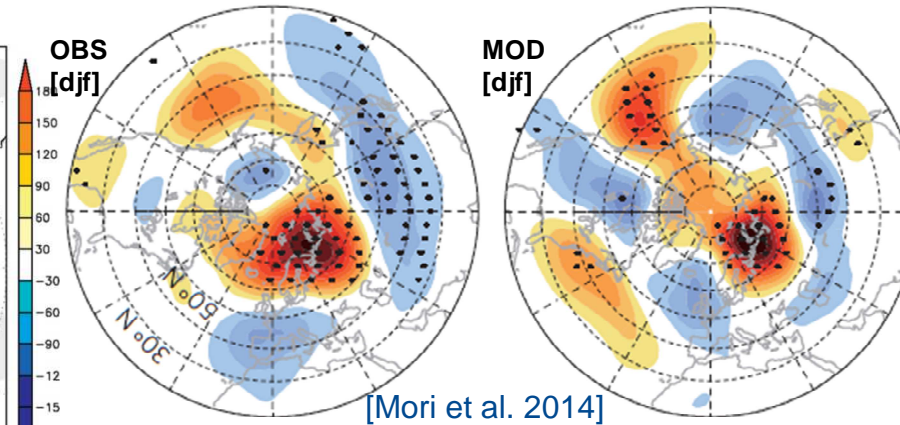
# Multi-model assessment of the impact of Arctic sea-ice variability on the winter North Atlantic-Eurasian atmospheric circulation

J. García-Serrano (UB,BSC), F.J. Doblas-Reyes (BSC), T. Koenigk (SMHI),  
C.D. Roberts (ECMWF), L. Terray (CERFACS), K. Wyser (SMHI)

Z250 / WAF (DJF)

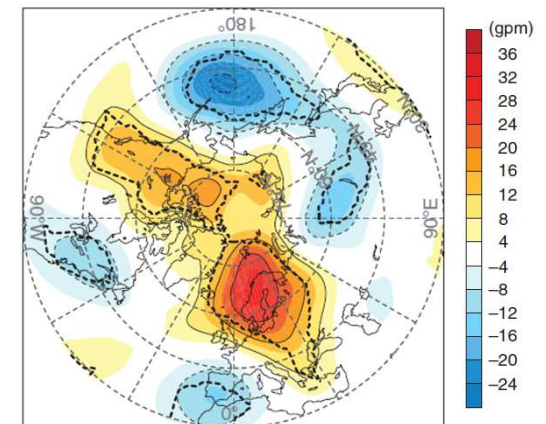


[Inoue et al. 2012]

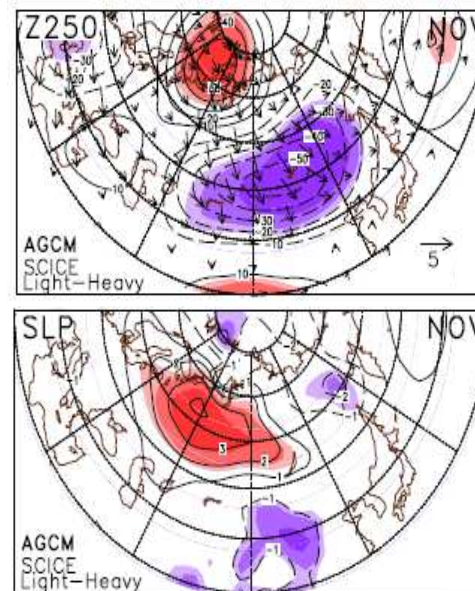


[Mori et al. 2014]

$\Delta Z500$  for ND, CAM5

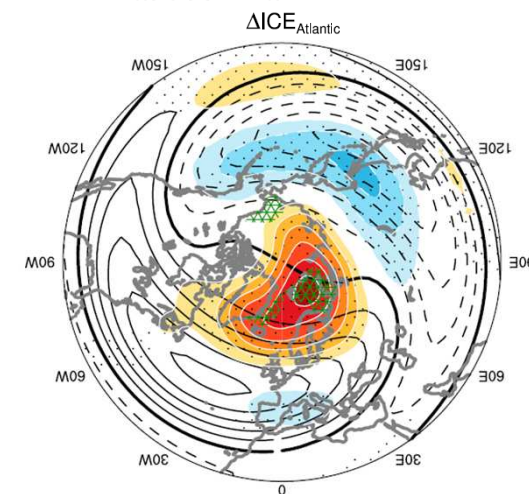


[Kim et al. 2014]

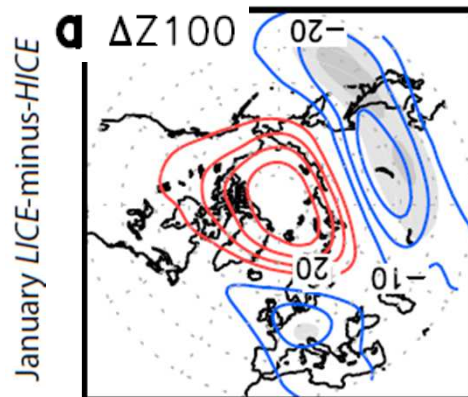


[Honda et al. 2009]

Z at 300 hPa Dec-Jan



[Sun et al. 2015]

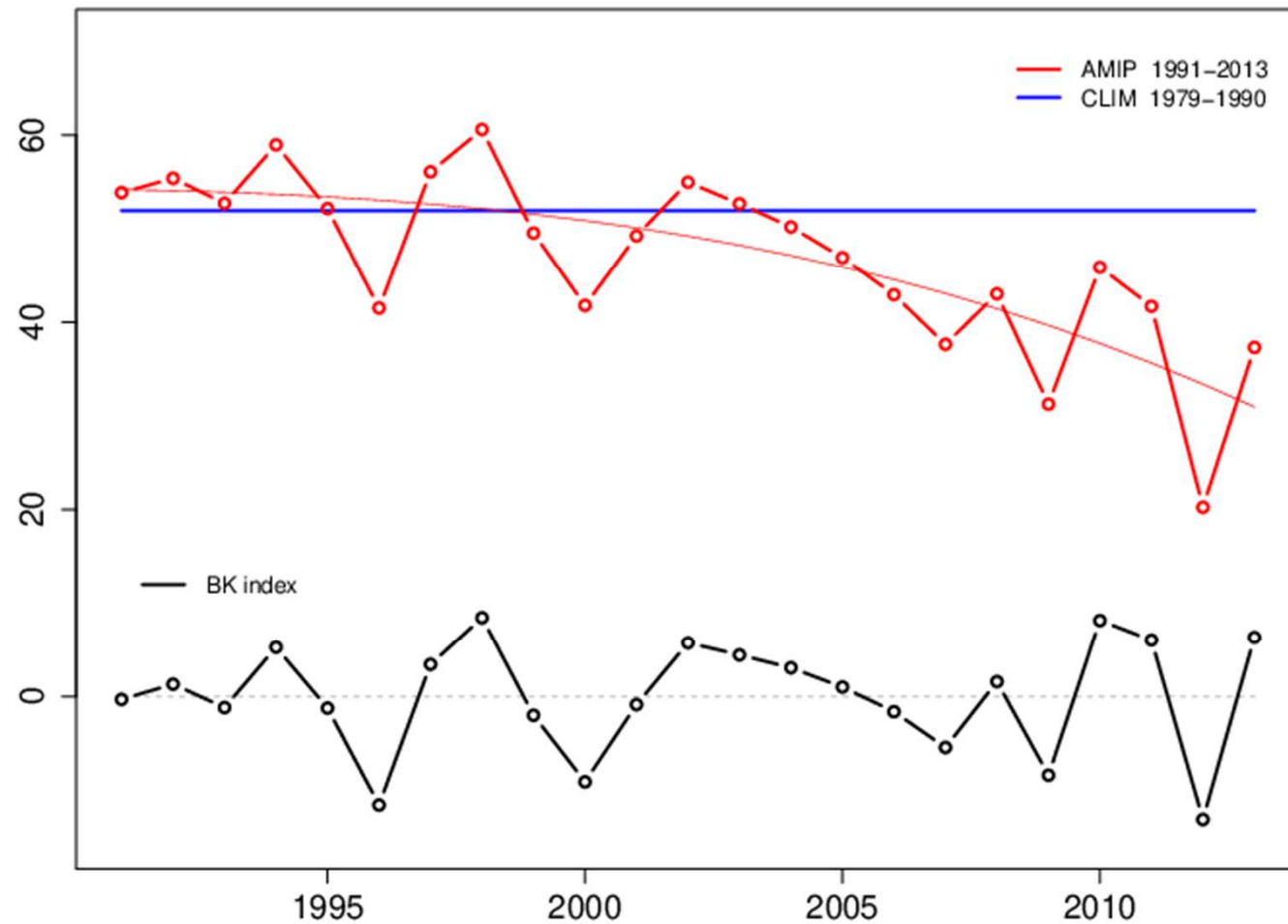


[Nakamura et al. 2015, 2016]

might be non-linear to SIC reduction!

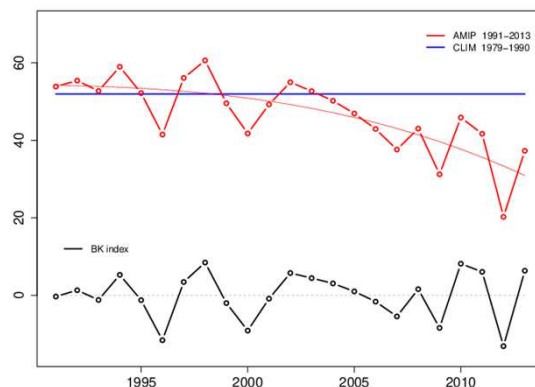
[Petoukhov and Semenov 2010]

## Barents-Kara SIC (nov)

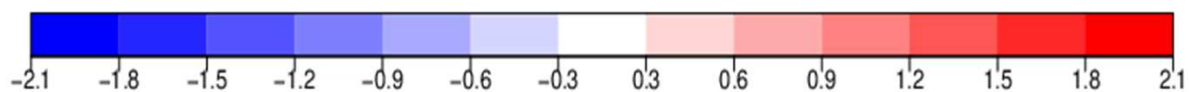
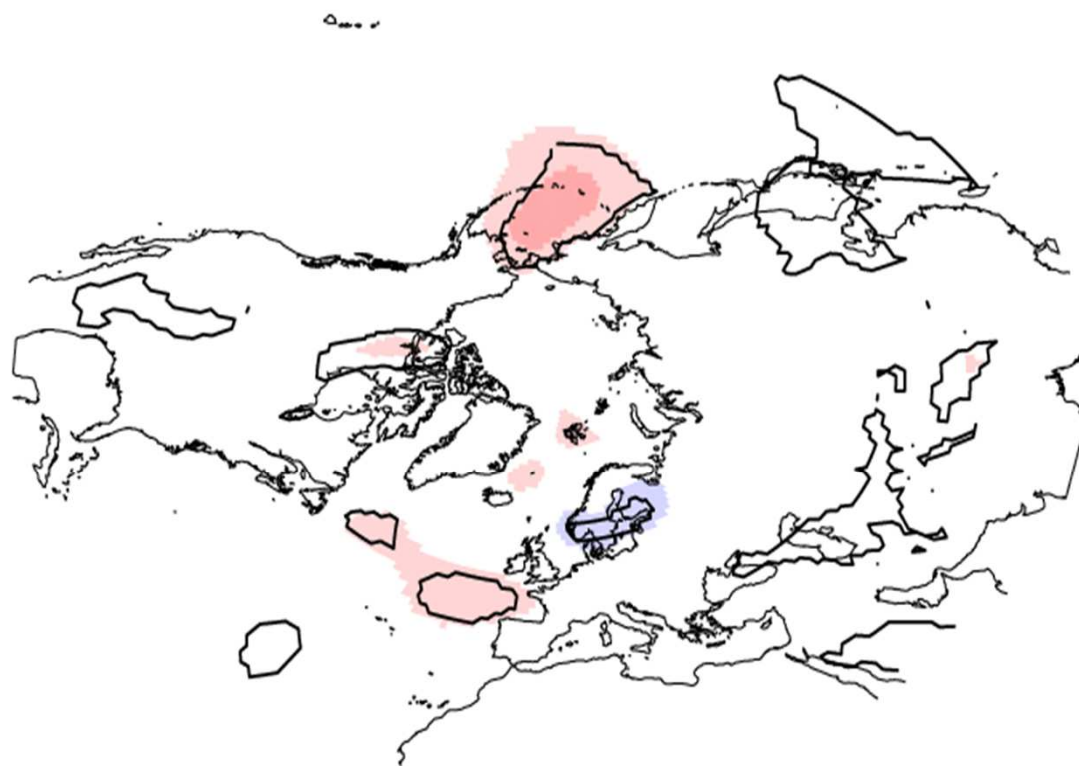


EC-EARTH/HR at T511 (approx. 40km) L91 (top 0.01hPa): 10 members AMIP + CLIM

Barents-Kara SIC (nov)

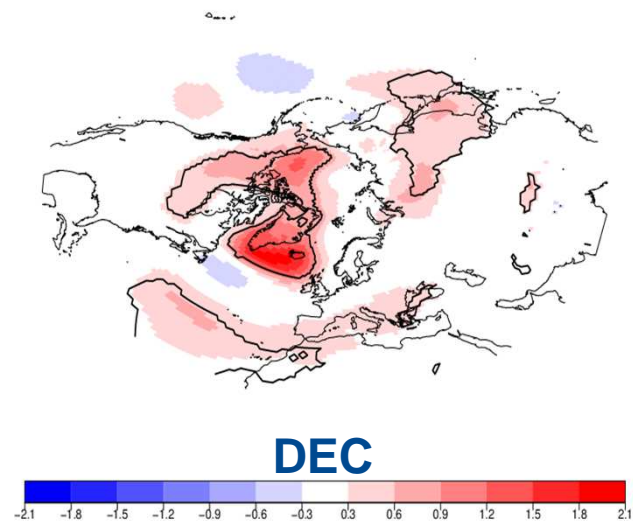


EC-EARTH HR | SLP std.dev AMIP-CLIM (djf)

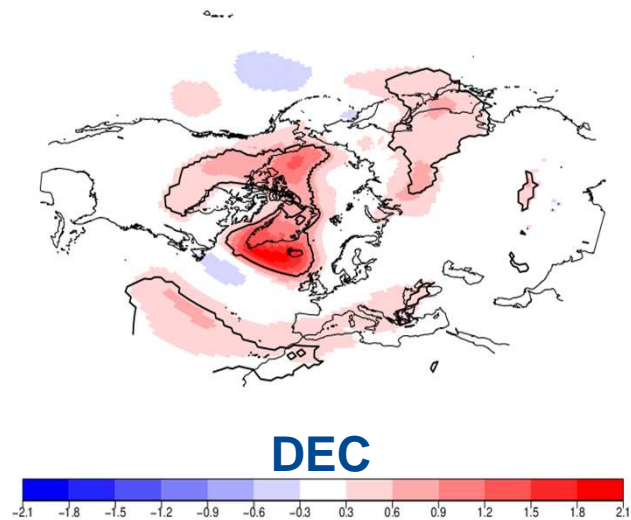




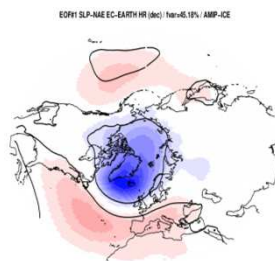
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)



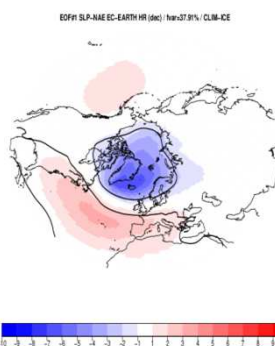
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)



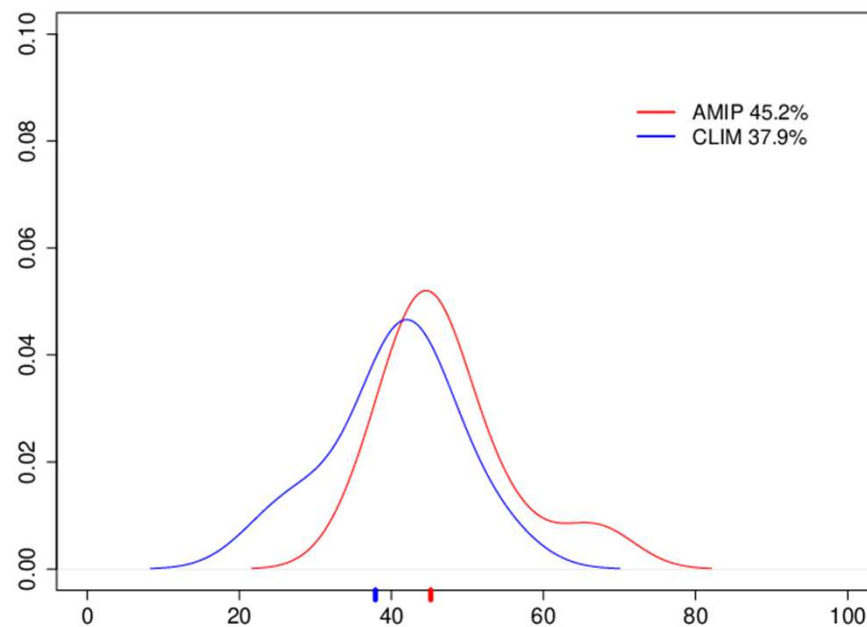
AMIP-ICE



CLIM-ICE

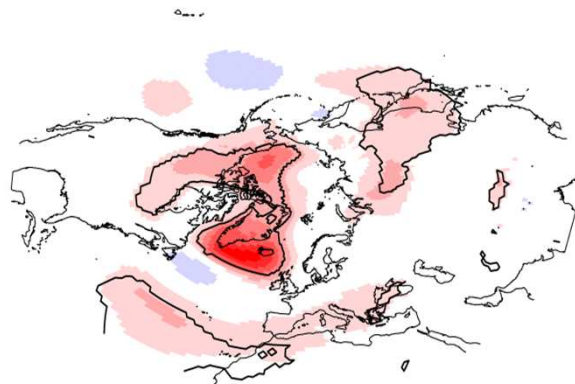


EC-EARTH HR | NAO SLP-NAE / AMIP vs CLIM (dec)

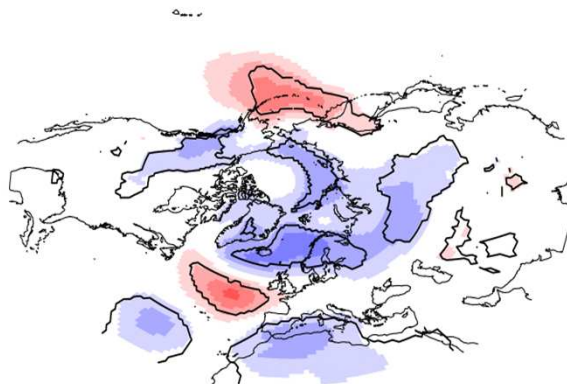
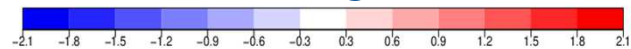


EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)

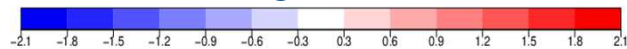
EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)



DEC

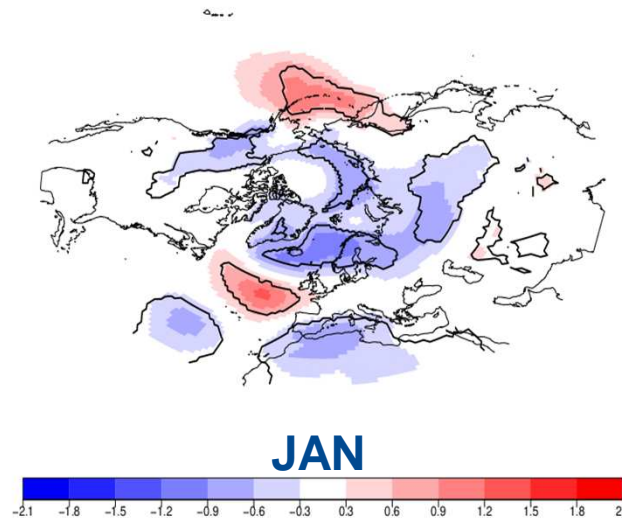
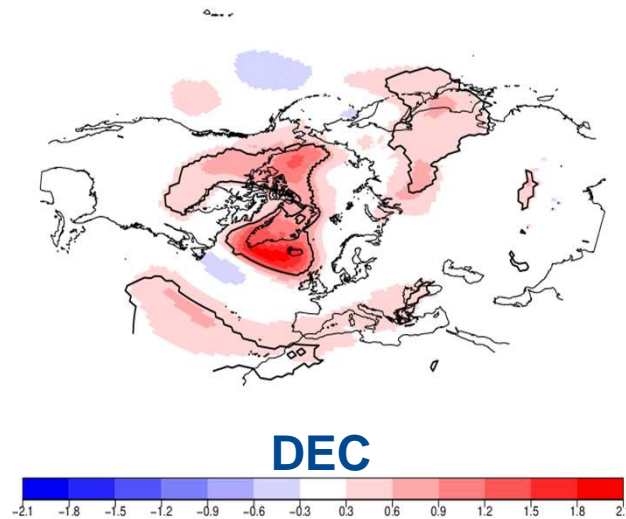


JAN

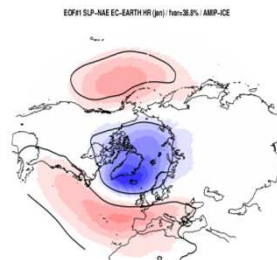


EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)

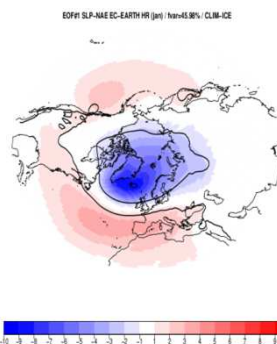
EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)



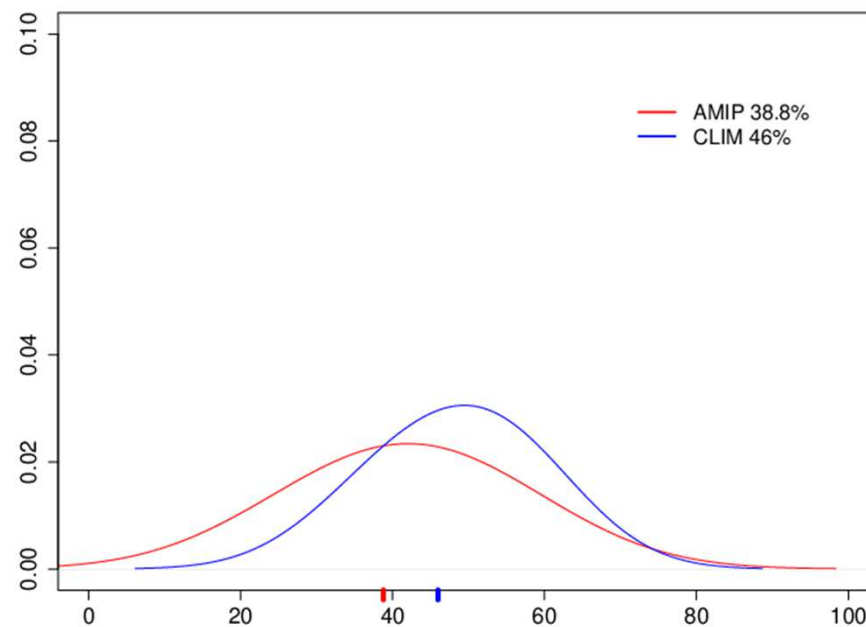
**AMIP-ICE**



**CLIM-ICE**

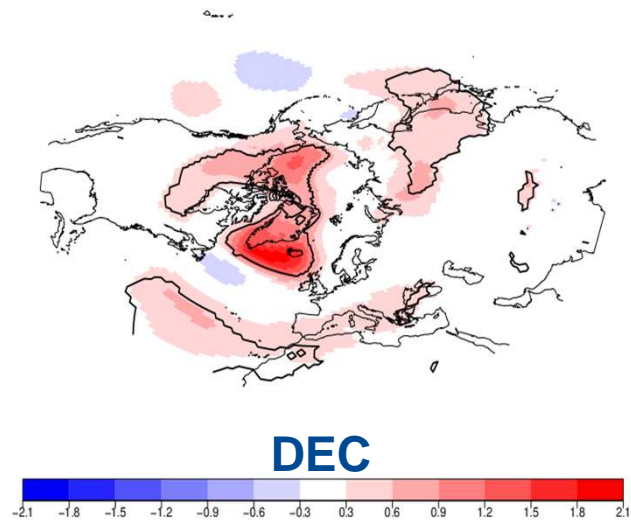


EC-EARTH HR | NAO SLP-NAE / AMIP vs CLIM (jan)

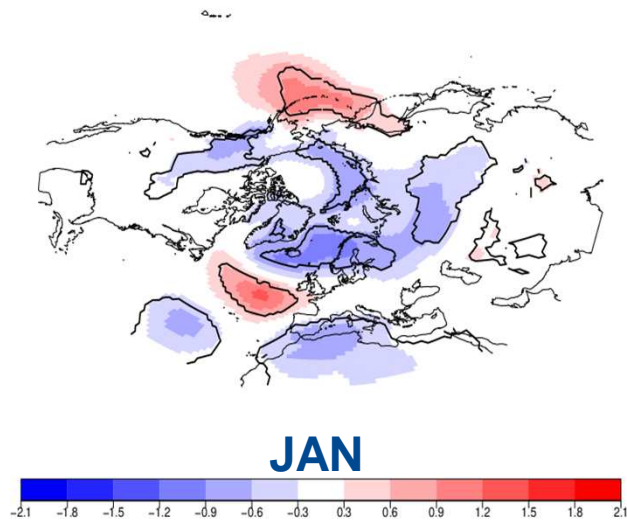




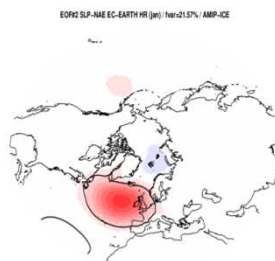
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)



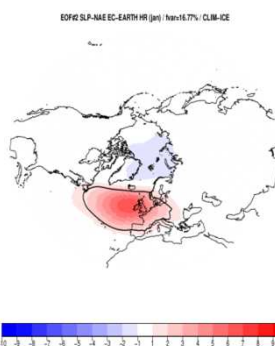
EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)



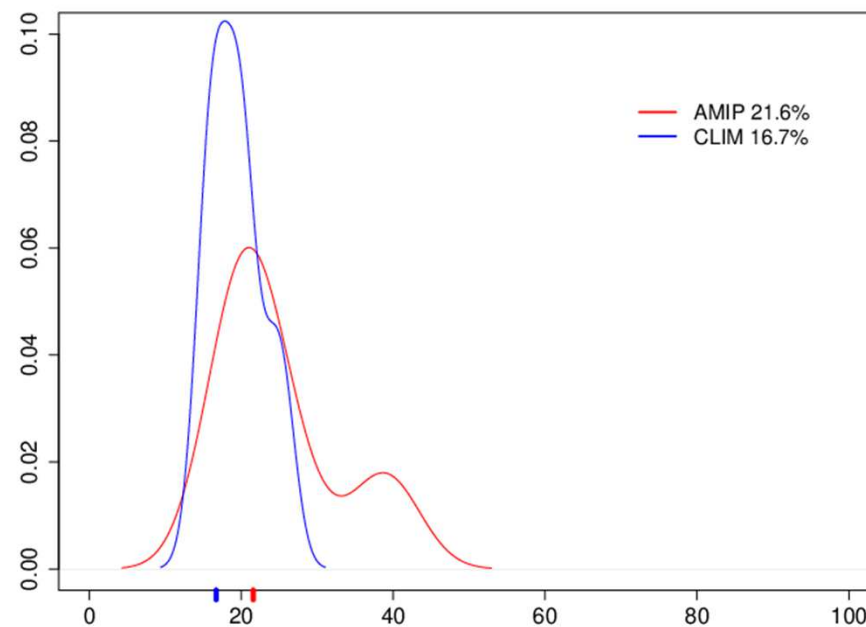
**AMIP-ICE**



**CLIM-ICE**



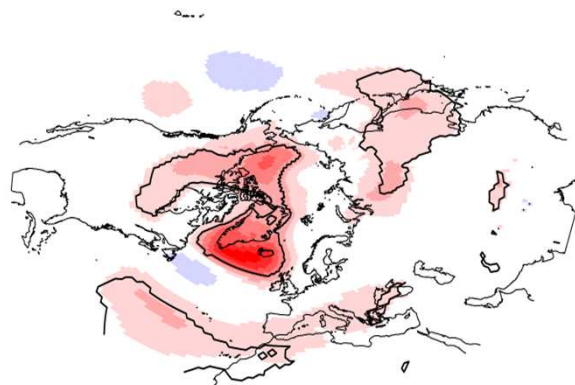
EC-EARTH HR | EA SLP-NAE / AMIP vs CLIM (jan)



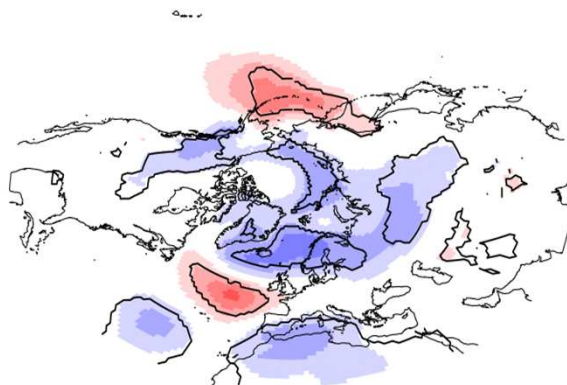
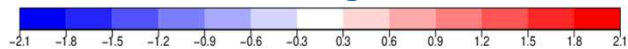
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)

EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)

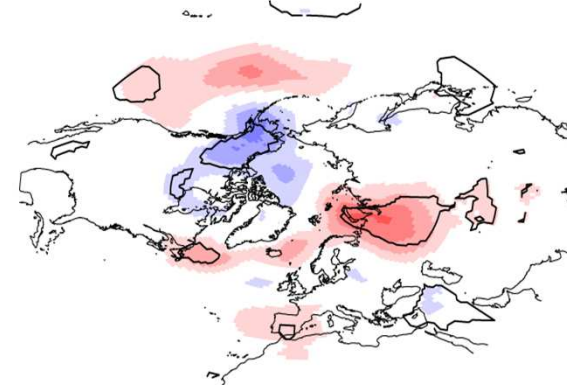
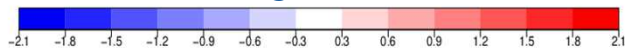
EC-EARTH HR | SLP std.dev AMIP-CLIM (feb)



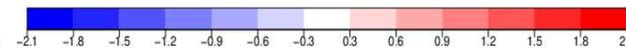
**DEC**



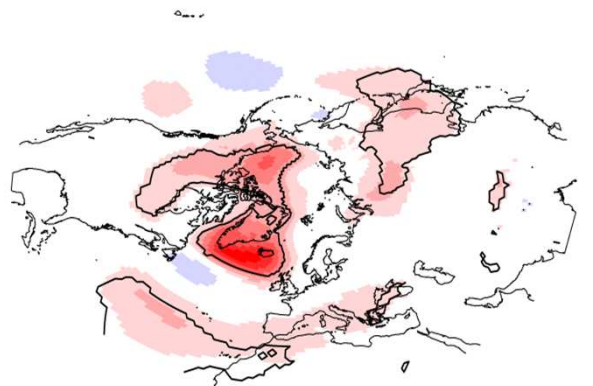
**JAN**



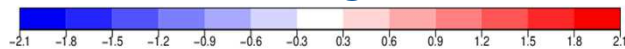
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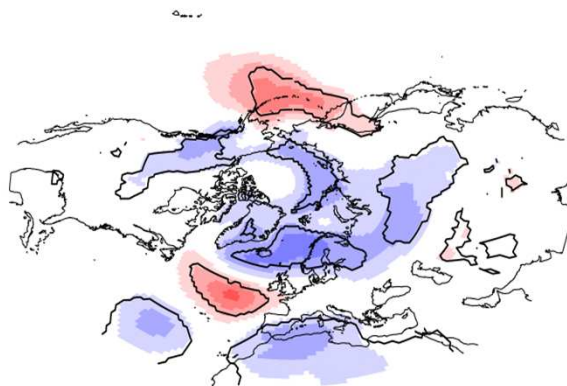
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)



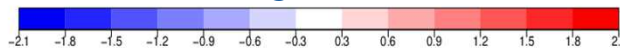
**DEC**



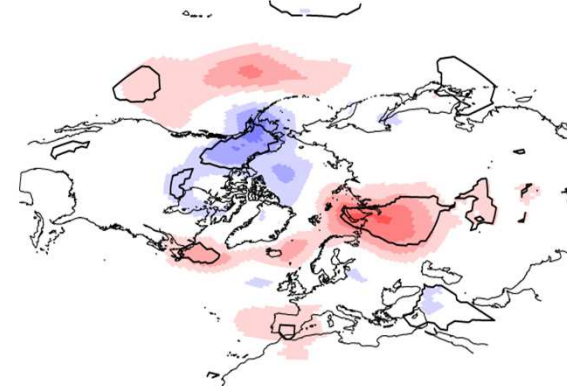
EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)



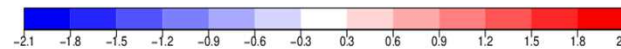
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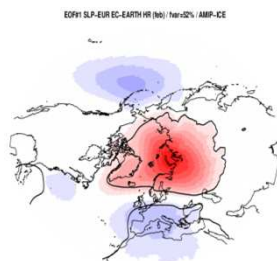
EC-EARTH HR | SLP std.dev AMIP-CLIM (feb)



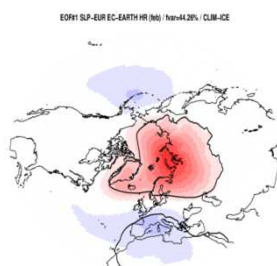
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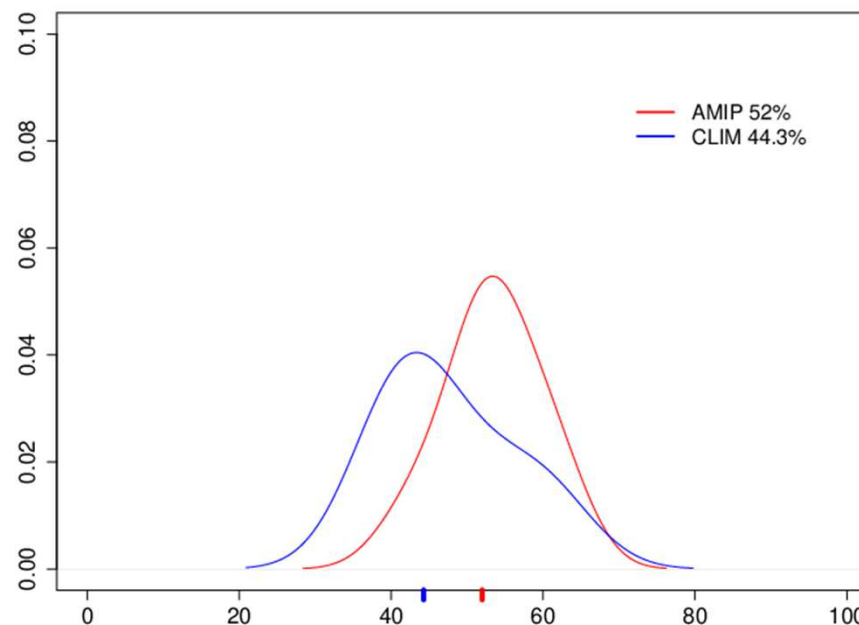
**AMIP-ICE**



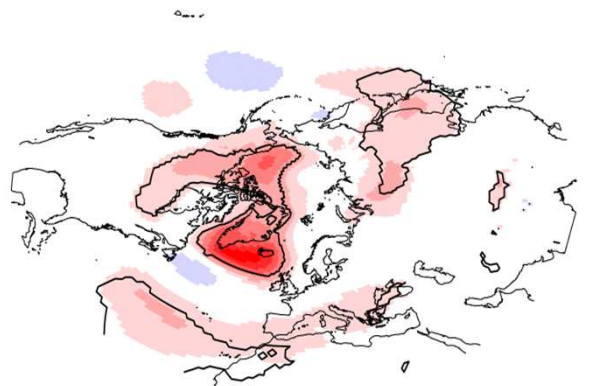
**CLIM-ICE**



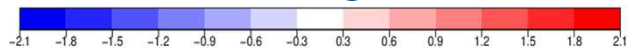
EC-EARTH HR | SLP-EUR / AMIP vs CLIM (feb)



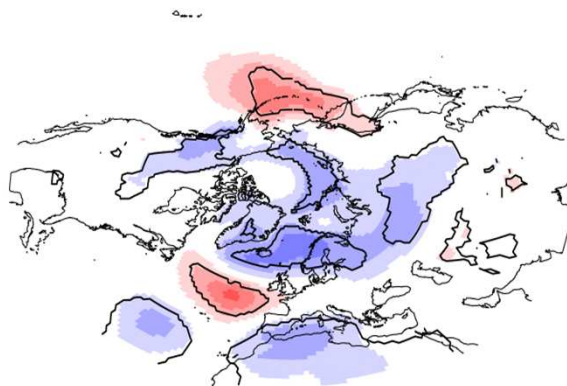
EC-EARTH HR | SLP std.dev AMIP-CLIM (dec)



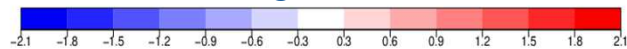
**DEC**



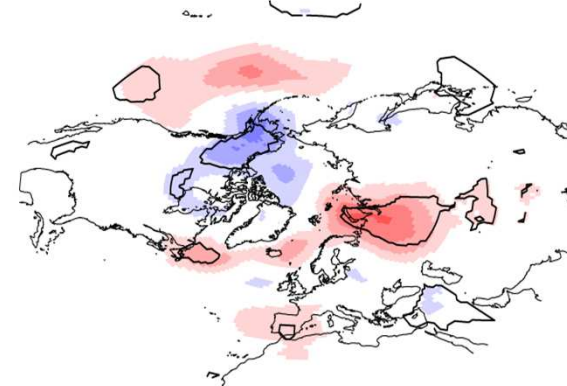
EC-EARTH HR | SLP std.dev AMIP-CLIM (jan)



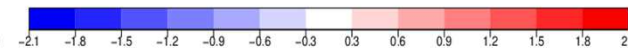
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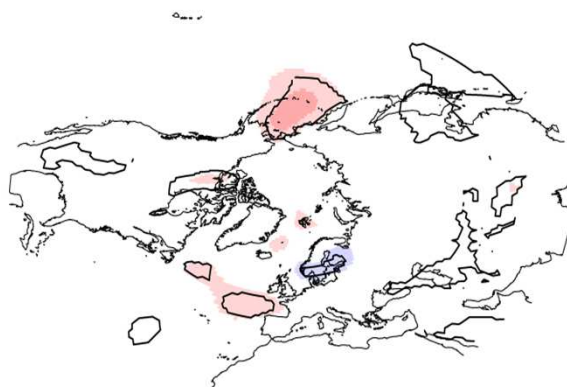
EC-EARTH HR | SLP std.dev AMIP-CLIM (feb)



**FEB**



EC-EARTH HR | SLP std.dev AMIP-CLIM (djf)



**- DJF -**





## SUMMARY:

- climatology (mean) + variability (interannual)
  - sea-ice variability affects SLP variability; this impact is model dependent and subseasonal, as it strongly depends on the mean-flow
  - sea-ice variability affects the fraction of explained variance of leading modes
- understanding how sea-ice variability impacts model's mean-flow (internal variability), may help understanding the atmospheric response and its timing